To the Commissioner of Patents and Trademarks:

Your petitioners, Norman R. Buck, a citizen of the United States of America, and residing at 523A Gilman Falls, RR 3, Old Town, ME 04468, Kympton Lovley, a citizen of the United States of America, and residing at 1264 Carmel Road North, Hampden, ME 04444, and John Elliott, a citizen of the United States of America, and residing at 114 Monroe Road, Winterport, ME 04496, pray that Letters Patent be issued to them for the invention entitled, Video Signal Timer Switch, of which the following is a specification.

Video Signal Timer Switch

## BACKGROUND OF THE INVENTION

This invention relates generally to video signals, and in particular to a method and apparatus for controlling video signals in and for televisions, VCRs, and video entertainment systems.

Television viewing, and other related forms of program watching and video game playing through the use of external devices connected to a television or other type of CRT-based apparatus, has long been a source of entertainment for children and adults alike. However, over the course of a long period of advancement in television viewing and video game playing, a problem has arisen regarding the amount of time spent watching or using the television and/or video game apparatus.

It has been reported on television news channels, such as the Fox News Network, that the average child who owns a video game system spends an average of ten hours per week playing the video game. The report also determined that the more hours a child spends in front of a video game, the lower their grades are on average. One of the biggest problems with home video game systems is controlling the amount of time a child spends playing it.

Prior art devices have attempted to address this problem. Some devices simply block out certain television channels

altogether. Other devices try to control television and video game apparatus by disrupting power to the television and/or video game apparatus. The first type devices do not address the problem of regulating the amount of time available, rather they take an all or nothing approach. The second type device addresses regulation of time available, but creates electronic problems. Turning power on and off to an electronic device severely stresses components within the device. Clocks and timers within the device itself must also be reset.

## SUMMARY OF THE INVENTION

The present invention addresses the limitations of the prior art by providing a method and apparatus for manipulating an RF or NTSC video source to control access for video products such as television, cable, satellite, VCR, DVD, and video game devices. An apparatus and method provided by the present invention takes a signal from any one of a number of signal sources and interfaces with the monitor/television/device subject to control. The apparatus and method provides a master control for the amount of time the entertainment source can be accessed and during which times of the day it can be accessed. Within the master control, subsidiary controls can be implemented within master code guidelines. The apparatus also provides its own video signal for on-screen display of functions and timing.

The present invention not only provides a control for the amount of time a child may use a video game system, but also provides a motivational mechanism as well. The present invention is simple but effective. The present invention interfaces the video game system with a home television. The present invention has a master control with its own password that allows limited access to a main menu. From the menu, the master controller, e.g., parents, set up accounts for one of several children and assign each child their own individual play time. Individual playtime may be expanded or contracted as part of an overall motivation scheme to reward achievement or desired behavior.

As a result, the present invention permits customizing usage patterns for multiple children. The present invention provides direct control of an incoming video signal where other devices enable/disable the power to either or both the video game system and television. The present invention provides a video overlay, so that a game player can clearly see how much time is available without affecting game play. The present invention allows a player to "bank" and "borrow" time to enable longer play. The present invention also permits parental control of time of day usage.

These together with other objects of the invention, along with various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed hereto and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying drawings and descriptive matter in which there is illustrated a preferred embodiment of the invention.

## BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a top view of the apparatus of the invention.

Fig. 2 is a block diagram of the apparatus of the invention.

Fig. 3 is a functional block diagram of the apparatus of the invention.

Fig. 4 is a functional block diagram of another embodiment of the apparatus of the invention.

Fig. 5 is flowchart of the method of the invention;

Fig. 6 is a sample introductory monitor screen according to the invention.

Fig. 7 is a sample master control monitor screen according to the invention.

Fig. 8 is a sample player control monitor screen according to the invention.

## DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings in detail wherein like elements are indicated by like numerals, there is shown in Figs. 1, 2 and 3, a video signal timer switch **1** embodying the principles of the present invention. For purposes of exposition, the invention will be described in terms of a video game system **2** using a television **3** for display and sound purposes. Most video game systems sold on the market today are adapted to using a home television for display and sound purposes. This substantially lowers the cost of the video game system since nearly all homes will have at least one television.

The switch **1** is comprised of a generally rectangular housing **10** with a top **11** and four sides **12**. The housing **10** has a control pad **13** with various keys **14** adapted for entering codes and commands into the invention **1** contained within and protruding through said housing top **11**. One of the housing sides **12** has a plurality of video input jacks **15** adapted to receive video outputs from devices such as VCR and DVD players, televisions, video game devices, and the like. In the embodiment shown, four input jacks **15** are provided so that four devices may be simultaneously connected to the housing **10**. For exposition purposes, a video

game device **2** has its video output connected to one of the video input jacks **15** of the switch **1**. In other embodiments of the invention, the housing **10** can be configured to accept as few as one or as many more as may be desired. Power may be supplied to the invention by means of external DC or AC, or internal battery power, or a combination of both, all such power supplies and techniques being well known in the prior art. In this embodiment, the housing has a power jack **16** on a housing side **12** adapted to receive DC power from an external source. One of the housing sides **12** also has a video output jack **17** adapted to bring the invention output to the "Video In" of the device being controlled, e.g., a television **3**. Within the housing **10**, an electronic control input module **20** is provided which is adapted to receiving signals from the control pad **13** and translating the signals into control signals for a microprocessor **21** within the housing **12**. The microprocessor **21** controls an input switch **22** which selects a desired input source by activating an appropriate input jack **15**. The video signal from the video game device **2** is brought into the housing **12** through the selected input jack **15** and passed through to a video controller/combiner **23**. The output from the video controller/combiner **23** is made available to the housing output jack **17**. The output from the output jack **17** is passed to the "Video In" jack of a television **3**. The microprocessor **21** also controls the video controller/combiner **23**. The microprocessor **21** essentially determines when the video controller/combiner **23**

passes the signal from the input switch **22** through to the housing output jack **17**, and for how long a period of time. The microprocessor **21** is also adapted to providing a video signal of its own to the video controller/combiner **23** either to be combined with the signal from the input switch **22** or to replace the signal from the input switch **22** in its entirety.

In another embodiment of the invention, the control pad **13** is remoted from the switch housing **10**, thereby providing a remote control. This embodiment is illustrated in Fig. 4. The original housing **10** replaces the control pad **13** with an infrared (IR) receiver **24** and means **27** along one of its sides **12** for receiving an IR signal. Functionally, everything else remains the same. The control pad **13** is incorporated into its own housing **50**, said housing having a top **51**, a bottom (not shown) and four sides **53**. The control pad **13** protrudes from said housing top **51**. An IR transmitter **25** is incorporated into the housing **50**, is electronically connected to the control pad **13**, and has means **26** along one of the housing sides **19** for transmitting an infrared signal to the IR receiver **24**.

Referring generally to the figures, and more particularly to Figs. 5-8 which illustrate the method of the present invention, an invention user enters a code by means of the control pad **13**. The microprocessor **21** is activated by the code and makes available through the video controller/combiner **23** various screen displays

on the television **3** presenting available features. The user then selects an appropriate or desired option and the microprocessor **21** enables the optional signal to be displayed on the television **3**.

An example of an initial opening screen **30** is shown in Fig. 5. The initial screen **30** will request a user identifier and/or a password **31**. This information is entered via the control pad **13**.

If the information **31** entered signals that it is a master control identifier, a master control screen **32**, an example of which is shown in Fig. 6, is presented on the television. The master control screen **32** permits the master controller, e.g., parent, to control usage patterns for up to five children. other embodiments of the invention may have more or less children. Each child is issued a unique password. "Daily Minutes" **33** is the amount of time added each day for each selected child. "Max Bank" **34** is the amount of time that can be stored up. "Max Borrow" **35** is the maximum time that can be borrowed per twenty-four hour period. The total allowed daily play time would be Daily Minutes **33** plus Max. Borrow **35**. The daily time period during which a child may be allowed to play may be set by means of the "Start Time" **36** and "End Hour" **37** controls. Control may also be extended and varied according to day of the week. Other relevant control features may also be added.

If the information **31** entered signals that it is an individual player, i.e., child, a player control screen **40**, an

example of which is shown in Fig. 7, is presented on the television monitor **2**. The player control screen **40** permits the player to select the desired video source, i.e., input jack 15 . The player control screen **40** will indicate the playing minutes available, the amount in the bank, and the amount available to be borrowed. The player can play with what has been allocated or can add to the allocated amount by borrowing. The player would then start the game and play it for some period of time. The player may check the amount of time available for playing by entering an appropriate code. Alternatively, the amount of time available may be continuously or intermittently displayed on a corner of the television screen. Various options may be implemented to signal the [player that the amount of time allocated may be about to end. For example, the screen color could be made to change to yellow when less than five minutes remain in the player's allocated playing time. The screen color could then be made to change to red when less than a minute remained in the player's allocated playing time. When the allocated time is used, the game would be interrupted. The player's control screen would then re-appear indicating that the player's allocated time had been used up. The player could then borrow more time if available or desired. Alternatively, after a designated period of time, the initial screen would re-appear.

Since it is highly desirable that the master control information remain in the switch **1**, power must remain available to the housing **10** and components therein. If an "ON/OFF" switch were incorporated into the housing **10**, a battery would be required within the housing **10** to maintain clocks, timers and tables within the microprocessor **21**.

It is understood that the above-described embodiments are merely illustrative of the application. Other embodiments may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.